

REMARKS

Reconsideration of the above-identified application in view of this amendment and these remarks is respectfully requested. Claims 1-72 are pending in the application. Claims 6,13, 17, 22, 28, 33, 38, 44, 48, 54, 58, 63, 66, and 72 are indicated as containing allowable subject matter if rewritten in independent form. New claims 73 – 86 placing the allowable subject matter in independent form are added. Applicant notes with appreciation the Examiner's indication of allowable subject matter for these claims. Claims 4, 15, 25, 36, 46 and 56 are objected to for confusing language. Claims 5, 6, 16, 17, 26, 27, 28, 37, 38, 47, 48, 57 and 58 are objected to for their dependency on an objected claim. Claims 1-3, 7, 8, 12, 14, 18, 19, 21, 23, 24, 29, 30, 32, 34, 35, 39, 40 and 43 stand rejected under 35 U.S.C. §102(b) as being anticipated by the article authored by Cree et al. *Towards Direct Reconstruction from a Gamma Camera Based on Compton Scattering* ("Cree"). Claims 4, 5, 9-11, 15, 16, 20, 25, 26, 27, 31, 36, 37, 41, 42, 43, 45-47, 49-53, 55-57, 64, 65, and 67-71 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Cree and for some of the claims in view of U.S. Patent No. 5,821,541 to Tumer (the "Tumer" patent). Applicant appreciates the Examiner's thorough and careful review of the text and drawings of the pending application.

Claim Objections

Claims 4, 15, 25, 36, 46 and 56 have been amended to remove the confusing language. It is respectfully requested that the objections to the claims be withdrawn. In addition, since dependent **claims 5, 6, 16, 17, 26, 27, 28, 37, 38, 47, 48, 57 and 58** were objected to for their respective dependency on an objected claim, it is respectfully requested that the objection to these claims be withdrawn in view of the claim amendments.

The §102 Rejections

Under 35 U.S.C. §102, anticipation requires that each and every element of the claimed invention be disclosed in the prior art. . . . In addition, the prior art reference must be enabling, thus placing the allegedly disclosed matter in the possession of the public. *Akzo N.V. v. United States International Trade Commission*, 1 USPQ 2d 1241, 1245 (Fed. Cir. 1986), *cert. denied*, 482 U.S. 909 (1987). Furthermore, not only must each and every element be disclosed in the prior art reference, “[a]nticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim.” *Lindemann Maschinenfabrik GmbH v American Hoist & Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984). These same principles are clearly recited in M.P.E.P §2131.

In the Cree article, particularly with respect to equation (19), the authors are describing: "the parallel ray projection to the camera aperture plane" (see text just prior to equation 15). The equation defines the forward problem, i.e. the physical process that results in the "raw" acquired data. This is not the solution as provided in the presently claimed invention. The authors then proceed to "solve" the inverse problem in three dimensions using a direct solution which is considerably different than the presently claimed invention. The authors clearly state on page 402 (just after "Theorem 2") that equation (19) is not enough to enable reconstruction to proceed. They do not use deconvolution and the reference is not enabling with respect to the presently claimed invention.

In contrast, **claims 1, 14, 23, and 34** all recite, in part, using subsets of data representing events and using a deconvolution function to localize the probable source location of incident photons based on said distribution of corresponding events. The presently claimed invention states a deconvolution function and does not recite "or mathematical logic" as stated by the Examiner. This new language inserted in the rejection of the claim by the Examiner is not the recited claim language and is improper. While a deconvolution function is mathematical in nature, it does not create a claim limitation to encompass all of

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“mathematical logic.” This additional language is simply improper for the rejection in the present application.

The rejections of the claims are improper for at least the following reasons (i) the Cree reference is not enabling to place the subject matter of the claimed invention in possession of the public, (ii) it does not recite the elements of the claimed invention as arranged in the claims and (iii) the additional language recited by the Examiner to support the rejection does not appear in the claimed invention. It is respectfully requested that the improper rejections be withdrawn and that claims 1, 14, 23 and 34 be allowed.

Claims 2, 3, 7, 8, and 12 depend ultimately from claim 1, **claims 18, 19 and 21** depend ultimately from claim 14, **claims 24, 29, 30, 32** depend ultimately from claim 23, **claims 35, 39, 40 and 43** depend ultimately from claim 34. The rejections for these dependent claims are improper for at least the same reasons that their respective independent claims. Withdrawal of the rejections and allowance of the claims is respectfully requested.

The §103 Rejections

For reasons similar to those stated above with respect to the §102 rejections, Cree does not disclose, teach or suggest subsets of associate data representing events and a deconvolution function to localize probable source locations of incident photons based on the distribution of corresponding events. Regarding **claims 4, 15, 25, 36, 46, 64 and 67**, the Examiner’s assertion is correct that Cree “does not specifically disclose the use of this detection layer as the first detection layer.” The assertion that he does not exclude it from being used is not the standard for obviousness. Cree must disclose, teach or suggest the claimed invention, it’s failure to exclude a claim element is not a disclosure, teaching or suggestion. The rejections for these claims are improper and it is respectfully requested that the rejections be withdrawn and the claims allowed.

The rejection of **Claims 5, 9-11, 16, 20, 26, 27, 31, 37, 41, 47, 49-51, 65, 68-71** are improper for at least the same reasons as the respective independent

claims from which they ultimately depend. As such, it is respectfully requested that the rejections be withdrawn and the claims be allowed.

The rejections of **claim 45 and 55** are improper since, as described above, Cree does not disclose, teach or suggest using a deconvolution function on any data, let alone the specific data in the second memory as recited in claim 45 and 55, to localize the probable source location of incident photons. In addition, the presently claimed invention states a deconvolution function and does not recite "or mathematical logic" as stated by the Examiner. This new language inserted in the rejection of the claim by the Examiner is not the recited claim language and is improper. As mentioned above, while a deconvolution function is mathematical in nature, it does not create a claim limitation to encompass all of "mathematical logic." This additional language is simply improper for the rejection in the present application. The rejections of the claims are improper for at least the following reasons (i) the Cree reference is not enabling to place the subject matter of the claimed invention in possession of the public, (ii) it does not disclose, teach or suggest the elements of the claimed invention as arranged in the claims and (iii) the additional language recited by the Examiner to support the rejection does not appear in the claimed invention. It is respectfully requested that the improper rejections be withdrawn and the claims allowed.

Claims 42, 52, 53, 56, 57, 59, 60, 61 and 62 depend ultimately from claims 34, 45 and 55 and are improper for at least the same reasons as the independent claims from which they ultimately depend. As such, it is respectfully requested that the rejections be withdrawn and the claims be allowed.

Allowable Subject Matter

Applicant appreciates the Examiner's indication of allowable subject matter for claims 6, 13, 17, 22, 28, 33, 38, 44, 48, 54, 58, 63, 66, and 72. The objections for these dependent claims in their present form are improper for at least the same reasons as for their respective independent claim from which they depend for the reasons recited above. Withdrawal of the objections to these

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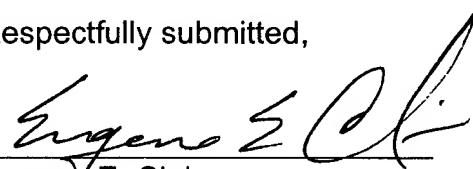
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dependent claims is respectfully requested. Regarding the **new claims 73-86**, which include the allowable subject matter of claims 6, 13, 17, 22, 28, 33, 38, 44, 48, 54, 58, 63, 66, and 72 in independent format, applicant respectfully asserts that the allowability of the new claims resides the respective deconvolution claim limitation recited in the original independent claims and does not rest solely on the limitation of electronic collimation as stated by the Examiner in the Office Action.

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Accordingly, allowance of the application is respectfully requested. Please charge any deficiency or credit any overpayment in the fees for this amendment to our Deposit Account No. 14-1270.

Respectfully submitted,



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Enclosures